ORDER NO. SD8001-1653

Service Manual

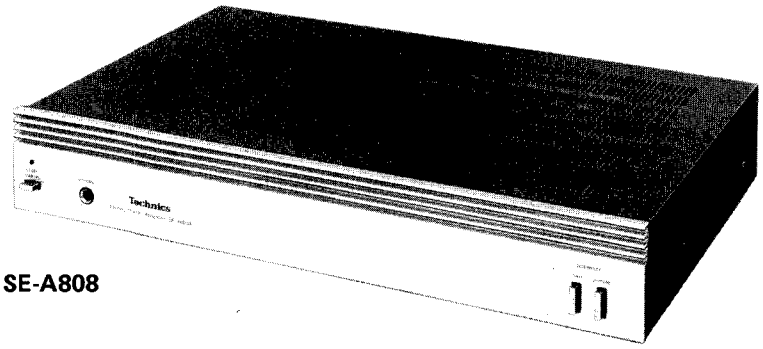
Stereo Power Amplifier

SE-A808

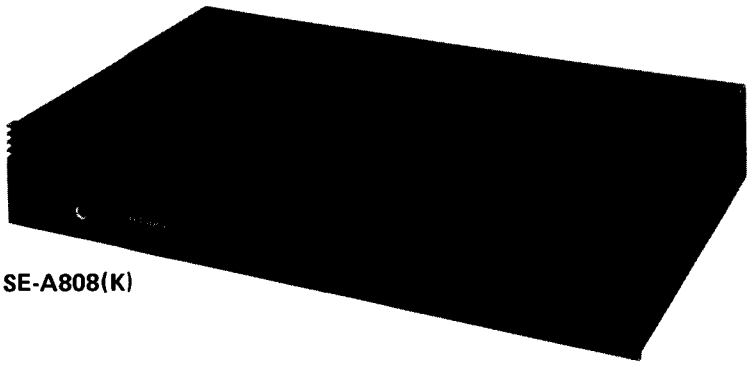
(DX), (DG), (DM), (EB), (XE), (XSW), (XGH), (XGF), (XA)

SE-A808(K)

(DX), (DG), (DM), (EB), (XSW), (XGH)



SE-A808



SE-A808(K)

***The colors of this model include silver and black. The black type model is provided with (K) in the Service Manual.**

Areas

- *(DX) is available in Scandinavia except Denmark and European.
- *(DG) is available in Scandinavia and European except Switzerland.
- *(DM) is available in Denmark.
- *(EB) is available in Beigium.
- *(XE) is available in United Kingdom.
- *(XSW) is available in Switzerland.
- *(XGH) is available in Holland.
- *(XGF) is available in France.
- *(XA) is available in Asia, Latin America, Middle East and Africa.

TECHNICAL SPECIFICATIONS [DIN 45 500]

Specifications are subject to change without notice for further improvement.

AMPLIFIER SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 40 W (4Ω)
	2 × 40 W (8Ω)
	90 W (BTL, 8Ω)
40 Hz~16 kHz continuous power output	
both channels driven	2 × 40 W (4Ω)
	2 × 40 W (8Ω)
	90 W (BTL, 8Ω)
1 kHz continuous power output	
both channels driven	2 × 50 W (4Ω)
	2 × 45 W (8Ω)
	100 W (BTL, 8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.03% (4Ω)
	0.02% (8Ω)
rated power at 40 Hz~16 kHz	0.03% (4Ω)
	0.02% (8Ω)
rated power at 1 kHz	0.03% (4Ω)
	0.02% (8Ω)
half power at 20 Hz~20 kHz	0.02% (4Ω)
	0.01% (8Ω)
half power at 1 kHz	0.009% (4Ω)
	0.006% (8Ω)
−26 dB power at 1 kHz	0.03% (4Ω)
50 mW power at 1 kHz	0.05% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.03%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.02%
Power bandwidth	
both channels driven, −3 dB	5 Hz~45 kHz (4Ω)
	5 Hz~45 kHz (8Ω)
Residual hum and noise	0.5 mV
Damping factor	16 (4Ω), 32 (8Ω)
Input sensitivity and impedance	500 mV/47kΩ
S/N	100 dB (108 dB, IHF, A)
Frequency response	
	(20 Hz~ 20 kHz) +0 dB, −0.2 dB
	(−1 dB) 5 Hz~60 kHz
Channel balance, 250 Hz~6,300 Hz	±0.5 dB
Channel separation, 1 kHz	60 dB
Headphones output level and impedance	400mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω
BTL, MAIN or REMOTE	8Ω~16Ω

GENERAL

Power consumption	460 W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 75 × 280 mm
Weight	5.8 kg

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

TECHNISCHE DATEN

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

[DIN 45 500]

VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 20 Hz ~ 20 kHz
beide Kanäle ausgesteuert
2 × 40 W (4 Ω)
2 × 40 W (8 Ω)
90 W (BTL, 8 Ω)

Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz
beide Kanäle ausgesteuert
2 × 40 W (4 Ω)
2 × 40 W (8 Ω)
90 W (BTL, 8 Ω)

Dauerton-Ausgangsleistung bei 1 kHz
beide Kanäle ausgesteuert
2 × 50 W (4 Ω)
2 × 45 W (8 Ω)
100 W (BTL, 8 Ω)

Gesamtklirrfaktor
Nennleistung bei 20 Hz ~ 20 kHz 0,03% (4 Ω)
0,02% (8 Ω)
Nennleistung bei 40 Hz ~ 16 kHz 0,03% (4 Ω)
0,02% (8 Ω)
Nennleistung bei 1 kHz 0,03% (4 Ω)
0,02% (8 Ω)
halbe Nennleistung bei 20 Hz ~ 20 kHz 0,02% (4 Ω)
0,01% (8 Ω)
halbe Nennleistung bei 1 kHz 0,009% (4 Ω)
0,006% (8 Ω)
−26 dB Leistung bei 1 kHz 0,03% (4 Ω)
50 mW Leistung bei 1 kHz 0,05% (4 Ω)

Intermodulationsfaktor
Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω 0,03%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω 0,02%

Leistungsbandbreite
beide Kanäle ausgesteuert bei −3 dB
5 Hz ~ 45 kHz (4 Ω)
5 Hz ~ 45 kHz (8 Ω)

Restbrumm und Geräusch 0,5 mV
Dämpfungsfaktor 16 (4 Ω), 32 (8 Ω)
Eingangsempfindlichkeit und -impedanz 500 mV/47 kΩ
Geräuschabstand 100 dB (108 dB nach IHF, A)
Frequenzgang (20 Hz ~ 20 kHz) +0 dB, −0,2 dB (−1 dB) 5 Hz ~ 60 kHz
Kanalabweichung (250 Hz ~ 6300 Hz) ±0,5 dB
Übersprechdämpfung (1 kHz) 60 dB
Kopfhörerpegel und -impedanz 400 mV/330 Ω
Lautsprecherimpedanz
MAIN oder REMOTE 4 Ω ~ 16 Ω
MAIN und REMOTE 8 Ω ~ 16 Ω
BTL, MAIN oder REMOTE 8 Ω ~ 16 Ω

ALLGEMEINE DATEN

Leistungsaufnahme 460 W
Netzspannung
Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T) 430 × 75 × 280 mm
Gewicht 6.8 kg

CARACTERISTIQUES TECHIQUES

Sujet à changement sans préaris.

[DIN 45 500]

SECTION AMPLIFICATEUR

Puissance de sortie continue de 20 Hz~20 kHz, les deux canaux en circuit
2 × 40W (4Ω)
2 × 40W (8Ω)
90W (BTL, 8Ω)

Puissance de sortie continue de 40 Hz~16 kHz, les deux canaux en circuit
2 × 40W (4Ω)
2 × 40W (8Ω)
90W (BTL, 8Ω)

Puissance de sortie continue à 1 kHz les deux canaux en circuit
2 × 50W (4Ω)
2 × 45W (8Ω)
100W (BTL, 8Ω)

Distorsion harmonique totale
à puissance nominale (20 Hz~20 kHz) 0,03% (4Ω)
0,02% (8Ω)
à puissance nominale (40 Hz~16 kHz) 0,03% (4Ω)
0,02% (8Ω)
à puissance nominale (1 kHz) 0,03% (4Ω)
0,02% (8Ω)
à demi-puissance (20 Hz~20 kHz) 0,02% (4Ω)
0,01% (8Ω)
à demi-puissance (1 kHz) 0,009% (4Ω)
0,006% (8Ω)
puissance de −26 dB à 1 kHz 0,03% (4Ω)
puissance de 50 mW à 1 kHz 0,05% (4Ω)

Distorsion d'intermodulation
à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω 0,03%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,02%

Réponse de fréquences
les deux canaux en circuit, −3 dB 5 Hz~45 kHz (4Ω)
5 Hz~45 kHz (8Ω)

Bruit et ronflement résiduels 0,5 mV
Coefficient d'amortissement 16 (4Ω), 32 (8Ω)
Sensibilité et impédance d'entrée 500 mV/47kΩ
Signal/Bruit 100 dB (108 dB, IHF, A)
Réponse de fréquence (20 Hz~20 kHz) + 0 dB, −0,2 dB (−1 dB) 5 Hz~60 kHz
Equilibrage des canaux, 250 Hz~6,300 Hz ±0,5 dB
Séparation des canaux, 1 kHz 60 dB
Niveau de sortie des casques et impédance 400 mV/330Ω
Impédance de charge
PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE) 4Ω~16Ω
PRINCIPALE et AUXILIAIRE (MAIN and REMOTE) 8Ω~16Ω
BTL, PRINCIPALE ou AUXILIAIRE (BTL, MAIN or REMOTE) 8Ω~16Ω

DIVERS

Consommation 460W
Alimentation CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr) 430 × 75 × 280 mm
Poids 6.8 kg

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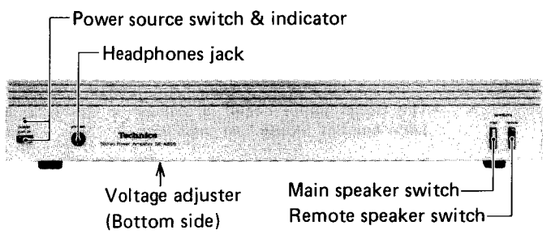
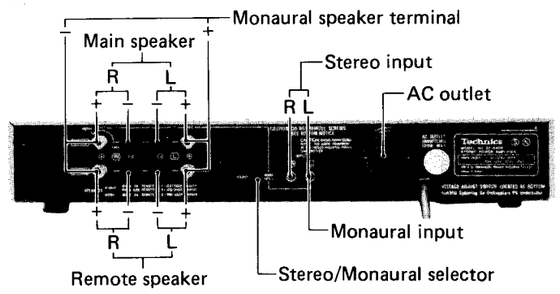
■ LOCATION OF CONTROLS

• Front panel view



• Rear panel view

This Photo is available in (DX, DG, EB, XGH) and (XGF)



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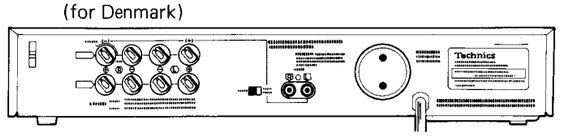
(for Denmark)



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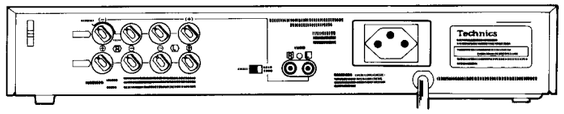

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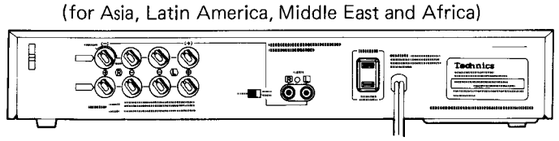

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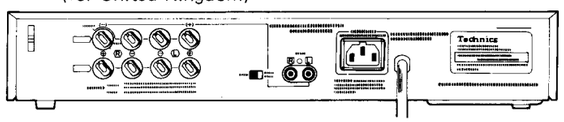
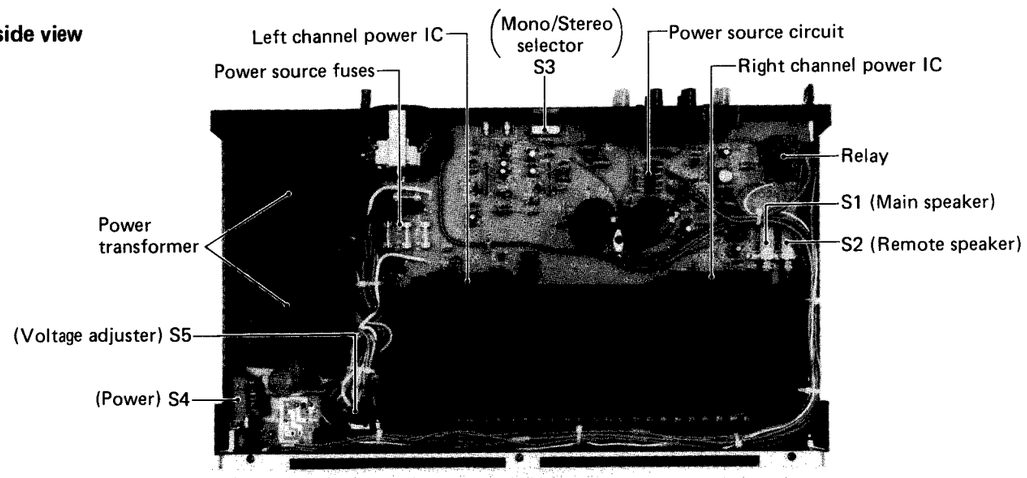


• Inside view



■ TO REMOVE THE PRINTED CIRCUIT BOARD

1. Remove the 2 setscrews on each side of the set to detach the cabinet.
2. Remove the latch which secures the input terminal on the rear panel, and the 2 setscrews (❶,❷ in Fig. 2) which fasten the speaker terminal.
3. Remove the setscrew ❸ used to secure the printed circuit board.
4. Remove the setscrews ❹ ~ ❻ which fasten the heat sink.
5. Cut off the lead clamp (SHR301) shown in Fig. 1.
6. Remove the 6 setscrews to detach the front panel as shown in Fig. 2.
7. Pull out the two connecting rods of the push-switch from the chassis.
8. Raise the printed circuit board up to a right angle to the chassis as shown in Fig. 3.

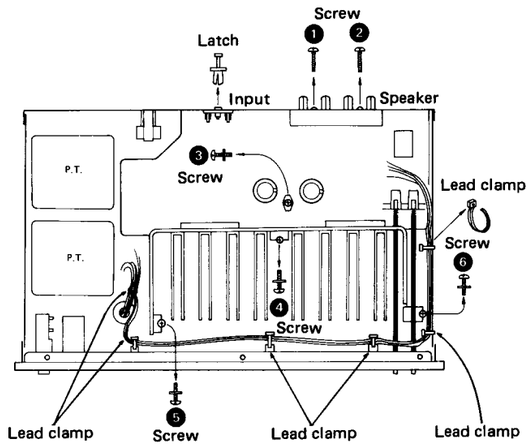


Fig. 1

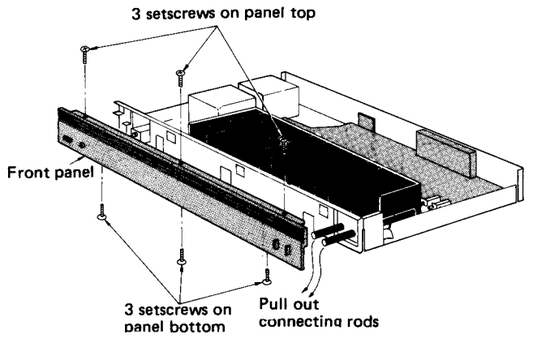


Fig. 2

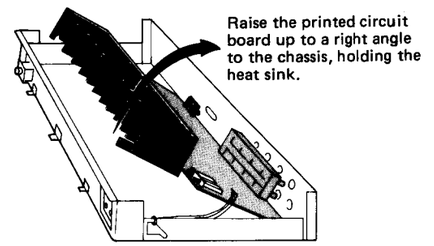
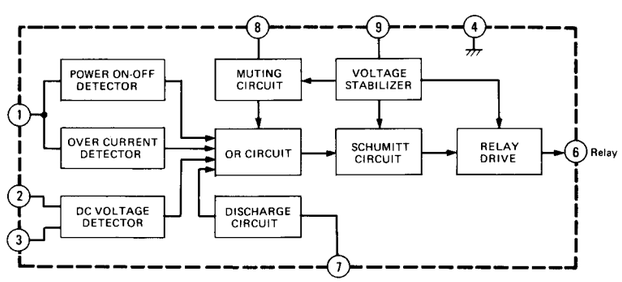


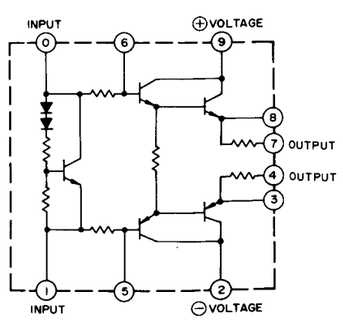
Fig. 3

■ BLOCK DIAGRAM OF IC'S

IC301 (SVITA7317P)
Muting and relay drive circuit



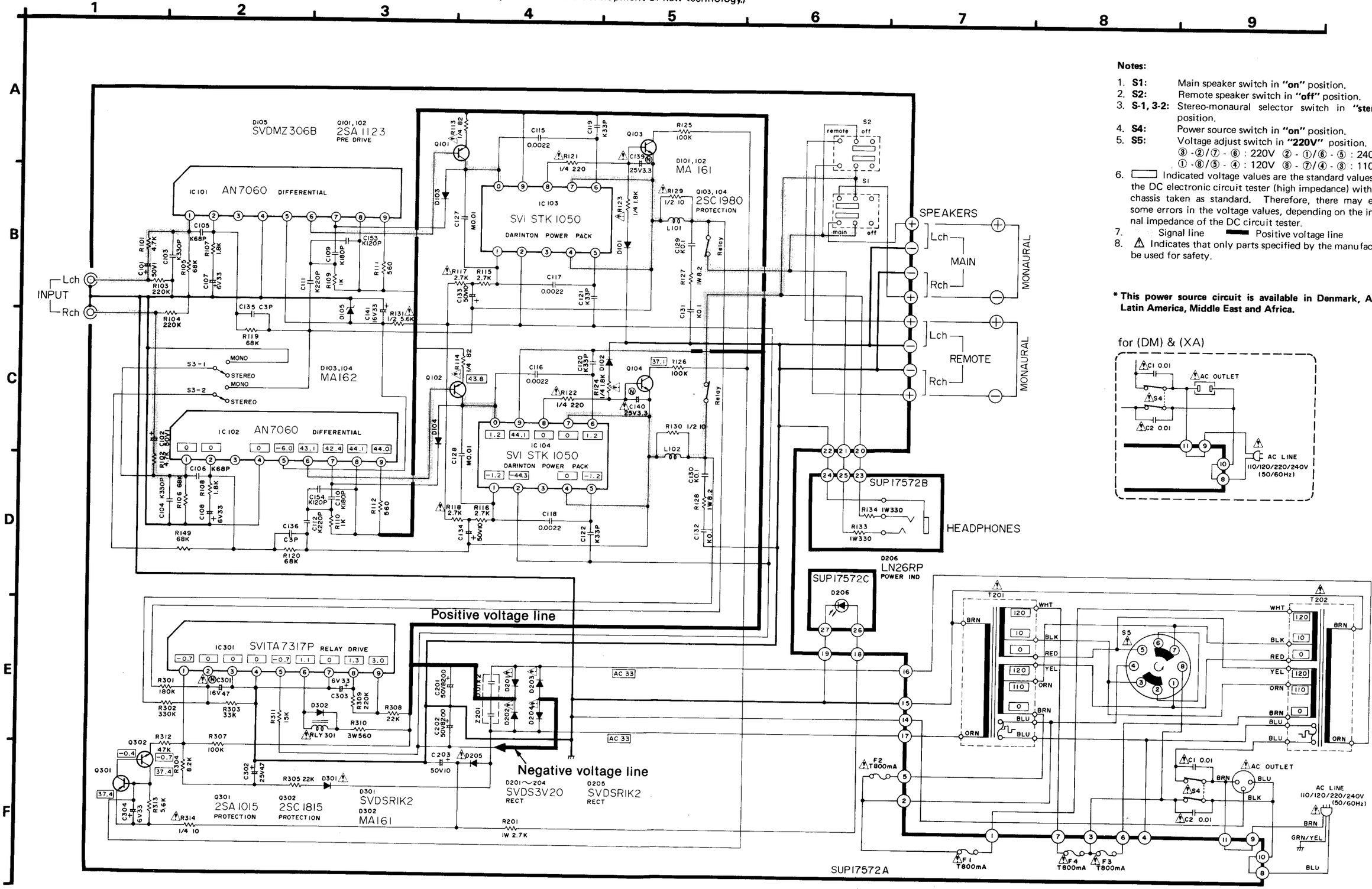
IC103, 104 (SVISTK1050)
Darington power amplifier



SE-A808

■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)



Notes:

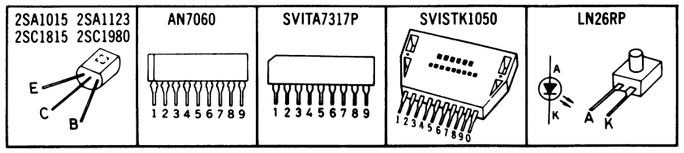
1. **S1:** Main speaker switch in **"on"** position.
2. **S2:** Remote speaker switch in **"off"** position.
3. **S-1, 3-2:** Stereo-monaural selector switch in **"stereo"** position.
4. **S4:** Power source switch in **"on"** position.
5. **S5:** Voltage adjust switch in **"220V"** position.
   ③ - ②/⑦ - ⑥ : 220V ② - ①/⑥ - ⑤ : 240V
   ① - ⑧/⑤ - ④ : 120V ⑧ - ⑦/④ - ③ : 110V
6. ▭ Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
7. Signal line ▬ Positive voltage line
8. ⚠ Indicates that only parts specified by the manufacturer be used for safety.

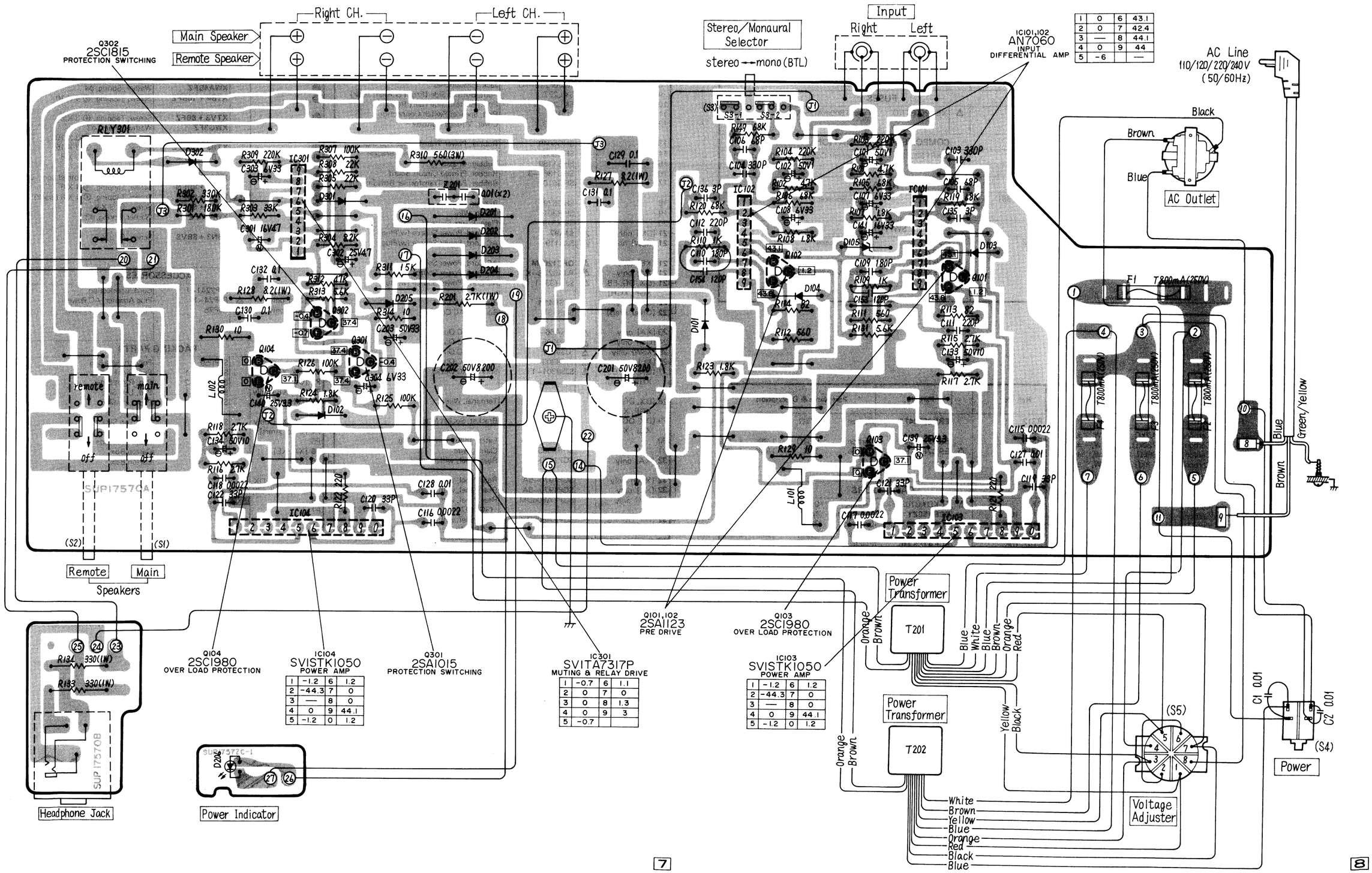
*** This power source circuit is available in Denmark, Asia, Latin America, Middle East and Africa.**

■ PRINTED CIRCUIT BOARD WIRING VIEW

Earth (Ground) lines

• **Terminal guide of Transistor and IC**





1	0	6	43.1
2	0	7	42.4
3	—	8	44.1
4	0	9	44
5	-6		—

1	-1.2	6	1.2
2	-44.3	7	0
3	—	8	0
4	0	9	44.1
5	-1.2	0	1.2

1	-0.7	6	1.1
2	0	7	0
3	0	8	1.3
4	0	9	3
5	-0.7		

1	-1.2	6	1.2
2	-44.3	7	0
3	—	8	0
4	0	9	44.1
5	-1.2	0	1.2

■ REPLACEMENT PARTS LIST

Notes: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacturer be used for safety.
3. The (K) -marked part are used only for the set based on the black type, and the other part are used in both silver and black type.

Black type model No. : SE-A808 (K)

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101, 102		AN7060F	IC, Input Amplifier
IC103, 104		SVISTK1050K	IC, Power Amplifier
IC301		SVITA7317P	IC, Muting & Relay Drive
TRANSISTORS			
Q101, 102		2SA1123–R	Transistor, Pre-Drive Amplifier (Use in ranks R, S or T)
Q103, 104		2SC1980–T	Transistor, Over load Protection (Use in ranks R, S or T)
Q301		2SA1015–O	Transistor, Over load Protection (Use in ranks Y or O)
Q302		2SC1815–O	Transistor, Over load Protection) (Use in ranks Y or O)
DIODES			
D101, 102, 302		**MA162A**	Diode, Thermal Compensation
D103, 104		**MA162A**	Diode
D105		SVDMZ306B	Diode, 6V Zener
D201 ~ 204	⚠	**SVDS3V40**	Rectifier
D205, 301	⚠	**SVDSR1K2**	Rectifier
D206		**LN26RP**	Light Emitting Diode, Power Indicator

Ref. No.		Part No.	Part Name & Description
COILS and TRANSFORMERS			
L101, 102		SLQY15G–3U	Coil, Output
T201, 202	⚠	SLT5M113	Transformer, Power Source
FUSES			
F1 ~ 4	⚠	XBA2C08TRO	Fuse, T800mA(250V)
COMPONENT COMBINATION			
Z201	⚠	EXRFS203ZS	Component Combination, 0.01μF(x2)
RELAY			
RELAY301	⚠	SSY69	Relay, Speaker Protection
SWITCHES			
S1, 2		SSH271	Switch, Speaker
S3		ESD7025	Switch, Balanced Transformer Less
S4	⚠	SSH119	Switch, Power
S5	⚠	ESE37200	Switch, Voltage Adjuster

• Resistors and Capacitors

Ref. No.		Part No.	Part Name & Description
RESISTORS			
R101, 102		**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R103, 104		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R105, 106		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%
R107, 108		**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ± 5%
R109, 110		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R111, 112		**ERD25FJ561**	Carbon, 560Ω, 1/4W, ± 5%
R113, 114	⚠	**ERD25FJ820**	Carbon, 82Ω, 1/4W, ± 5%
R115, 116		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R117, 118	⚠	ERD2FCG272	Fuse Type Carbon, 2.7kΩ, 1/4W, ± 2%
R119, 120		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%
R121, 122	⚠	ERD2FCG221	Fuse Type Carbon, 220Ω, 1/4W, ± 2%
R123, 124	⚠	**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ± 5%
R125, 126		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R127, 128		**ERX1ANJ8R2**	Metal Film, 8.2Ω, 1W, ± 5%
R129, 130	⚠	**ERD50FJ100**	Carbon, 10Ω, 1/2W, ± 5%
R131	⚠	**ERD50FJ562**	Carbon, 5.6kΩ, 1/2W, ± 5%
R133, 134		**ERG1ANJ331**	Metal Oxide, 330Ω, 1W, ± 5%
R149		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%
R201		**ERG1ANJ272**	Metal Oxide, 2.7kΩ, 1W, ± 5%
R301		**ERD25TJ184**	Carbon, 180kΩ, 1/4W, ± 5%
R302		**ERD25TJ334**	Carbon, 330kΩ, 1/4W, ± 5%
R303		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R304		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ± 5%
R305		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R307		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R308		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R309		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R310		**ERG3ANJ561**	Metal Oxide, 560Ω, 3W, ± 5%
R311		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%

Ref. No.		Part No.	Part Name & Description
R312		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R313		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R314	⚠	ERD2FCG100	Carbon, 10Ω, 1/4W, ± 2%
CAPACITORS			
C1, 2	⚠	ECKDKC103PF	Ceramic, 0.01μF, 400VAC, +100 0 %
C101, 102		**ECEA50Z1**	Electrolytic, 1μF, 50V
C103, 104		ECKD1H331KB	Ceramic, 330pF, 50V, ±10%
C105, 106		ECCD1H680K	Ceramic, 68pF, 50V, ±10%
C107, 108		**ECEA1CS330**	Electrolytic, 33μF, 16V
C109, 110		ECCD1H181K	Ceramic, 180pF, 50V, ±10%
C111, 112		ECCD1H221K	Ceramic, 220pF, 50V, ±10%
C115, 116		ECKD1H222MD	Ceramic, 0.0022μF, 50V, ±20%
C117, 118		ECKD1H222MD	Ceramic, 0.0022μF, 50V, ±20%
C119, 120		ECCD2H330K	Ceramic, 33pF 500V, ±10%
C121, 122		ECCD2H330K	Ceramic, 33pF, 500V, ±10%
C127, 128		ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%
C129, 130		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C131, 132		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C133, 134		**ECEA1HS100**	Electrolytic, 10μF, 50V
C135, 136		ECCD1H030C	Ceramic, 3pF, 50V, ±0.25pF
C139, 140	⚠	**ECEA25N3R3**	Non-Polar Electrolytic, 3.3μF, 25V
C141		**ECEA1CS330**	Electrolytic, 33μF, 16V
C153, 154		ECCD1H121K	Ceramic, 120pF, 50V, ±10%
C201, 202		ECETS1HV822U	Electrolytic, 8200μF, 50V
C203		**ECEA1JS330**	Electrolytic, 33μF, 63V
C301	⚠	**ECEA16N47**	Non-Polar Electrolytic, 47μF, 16V
C302		**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C303, 304		**ECEA1CS330**	Electrolytic, 33μF, 16V

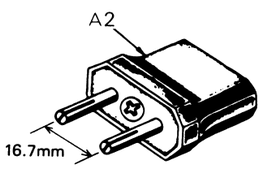
Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SYW241	Panel, Front Assy
1	(K)	SYW243	Panel, Front Assy (Black)
2		SHS2437	Fiber, Front Panel
3		TBY13307	Button, Power Switch
3	(K)	SBC265	Button, Power Switch (Black)
4		SUS159	Spring, Push Button
5		SBC241	Button, Speaker Switch
5	(K)	SBC241–1	Button, Speaker Switch (Black)
6		**XNS12**	Nut, Headphones Jack M'tg
7		SNE59–1	Washer, Headphones Jack
8		XCJ6P21B–A1	Jack, Headphones
9		SKL227	Foot, Bottom Side (Front & Right Rear)
10		SKL229–1	Foot, Bottom Side (Left Rear)
11		SUB37	Rod, Speaker Switch Connection
12		SUV453	Cover, Voltage Adjuster
13		SHG6049	Rubber, Power Transformer Top Side
14		SHG6087	Rubber, Power Transformer Bracket
15		SHG1189	Rubber, Chassis
16		SHG1367–3	Rubber, Printed Circuit Board
17		SHG6101	Rubber, Power Transformer Bottom Side
18		SHG679	Rubber, Chassis
19		SHR301	Clamp, Wire
20		SMX319	Plate, Power Switch Cover
21 [DM] only	⚠	**SJA97**	AC Cord, Power Source (w/Plug)
21 [XSW] only	⚠	SJA119	AC Cord, Power Source (w/Plug)
21 [XE] only	⚠	**QFC1206M**	AC Cord, Power Source
21 [XA] only	⚠	RJA52ZB–K	AC Cord, Power Source (w/Plug)
21 [DX, DG, EB, XGF, XGH]	⚠	SJA103–1	AC Cord, Power Source (w/Plug)
22 [DM] only		SFSR4N4	Bushing, AC Cord
22 [Other Arers]		SHR131	Bushing, AC Cord
23 [XA] only	⚠	SJSA66–2	Socket, AC Outlet
24 [DM] only	⚠	SJS9305	Socket, AC Outlet
25 [XSW] only	⚠	SJS9307	Socket, AC Outlet
26 [XE] only	⚠	SJS9303	Socket, AC Outlet
27 [DX, DG, EB, XGF, XGH]	⚠	SJS9301–1	Socket, AC Outlet
28 [DX, DG, EB, XGF, XGH]		SJT221	Terminal, Wire
29 [DX, DG, EB, XGF, XGH]		SUW1635	Bracket, Socket M'tg
30		SHR401–1	Latch, Input Terminal M'tg
31		SHR9505	Clamp, Wire
32 [XA] only		SGP1970–2A	Rear Panel, with Chassis
32 [XSW] only		SGP1970–5A	Rear Panel, with Chassis
32 [XE] only		SGP1970–6A	Rear Panel, with Chassis
32 [DM] only		SGPEA808DM	Rear Panel, with Chassis (SGP1970-4A with Name Plate SGT21230)
32 [DX, DG, EB, XGF, XGH]		SGPEA808DX	Rear Panel, with Chassis (SGP1970-3A with Name Plate SGT21250)

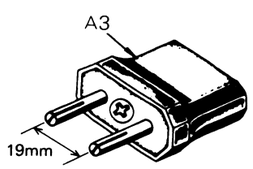
Ref. No.		Part No.	Part Name & Description
33		SJF3207–1	Terminal, Input
34		SJF5811	Terminal, Speaker
35		SKC170H	Cabinet
35	(K)	SKC170B	Cabinet (Black)
36		SMX321	Plate, Cabinet
37		SHS2435	Fiber, Cabinet
SCREWS and WASHERS			
●		**XTB3 + 8BFZ**	Screw, Tapping, ⊕3 X 8
●		**XTB3 + 10BFN**	Screw, Tapping, ⊕3 X 10
●		**XWG4FZ**	Washer, Plain, φ4
●		**XWA4BFZ**	Washer, Spring, φ4
●		**XTB4 + 10BFZ**	Screw, Tapping, ⊕ 4 X 10
●		**XTV3 + 8BFZ**	Screw, Tapping, ⊕ 3 X 8
●		**XWG3FZ**	Washwr, Plain, φ3
●		**XTB3 + 10BFZ**	Screw, Tapping, ⊕ 3 X 10
●		**XTB3 + 16BFZ**	Screw, Tapping, ⊕ 3 X 16
●		**XTB3 + 8BFZ**	Screw, Tapping, ⊕ 3 X 8
●		**XWC3B**	Washer, External Toothed Lock, φ3
●		**XTB4 + 8BFN**	Screw, Tapping, ⊕ 4 X 8
●	(K)	**XTB4 + 8BFZ**	Screw, Tapping, ⊕ 4 X 8 (Black)
●		**XSN3 + 6BVS**	Screw, ⊕ 3 X 6
●		**XWA3BFZ**	Washer, Spring, φ3
●		**XSN3 + 8BVS**	Screw, ⊕ 3 X 8
ACCESSORIES			
A1		SJP2241–1	Cord, Connection
A2 [XA] only	⚠	RJP74–1	Plug Adapter, AC Power
A3 [XA] only	⚠	RJP75	Plug Adapter, AC Power
PACKING PARTS			
P1		SPP659	Polyethylene Bag
P2 [XA, XE] only		SPS2397–1	Pad, Right Side
P2 [Other Arers]		SPS2397–2	Pad, Right Side
P3 [XA, XE] only		SPS2395–1	Pad, Left Side
P3 [Other Arers]		SPS2395–2	Pad, Left Side
P4 [XA, XE] only		SPS2425	Pad, Top Side
P4 [Other Arers]		SPS2539	Pad, Top Side
P5		SPS2489	Pad, Front Side
P6 [XA, XE]		SPG2355	Carton Box
P6 [XGF]		SPG2359	Carton Box
P6 [DG, XSW, DX, DM, XGH, EB]		SPG2357	Carton Box
P6	(K)	SPG2363	Carton Box (Available in Black Model)
P7		SQF10321	Instructions Book, Printed Matter

Areas

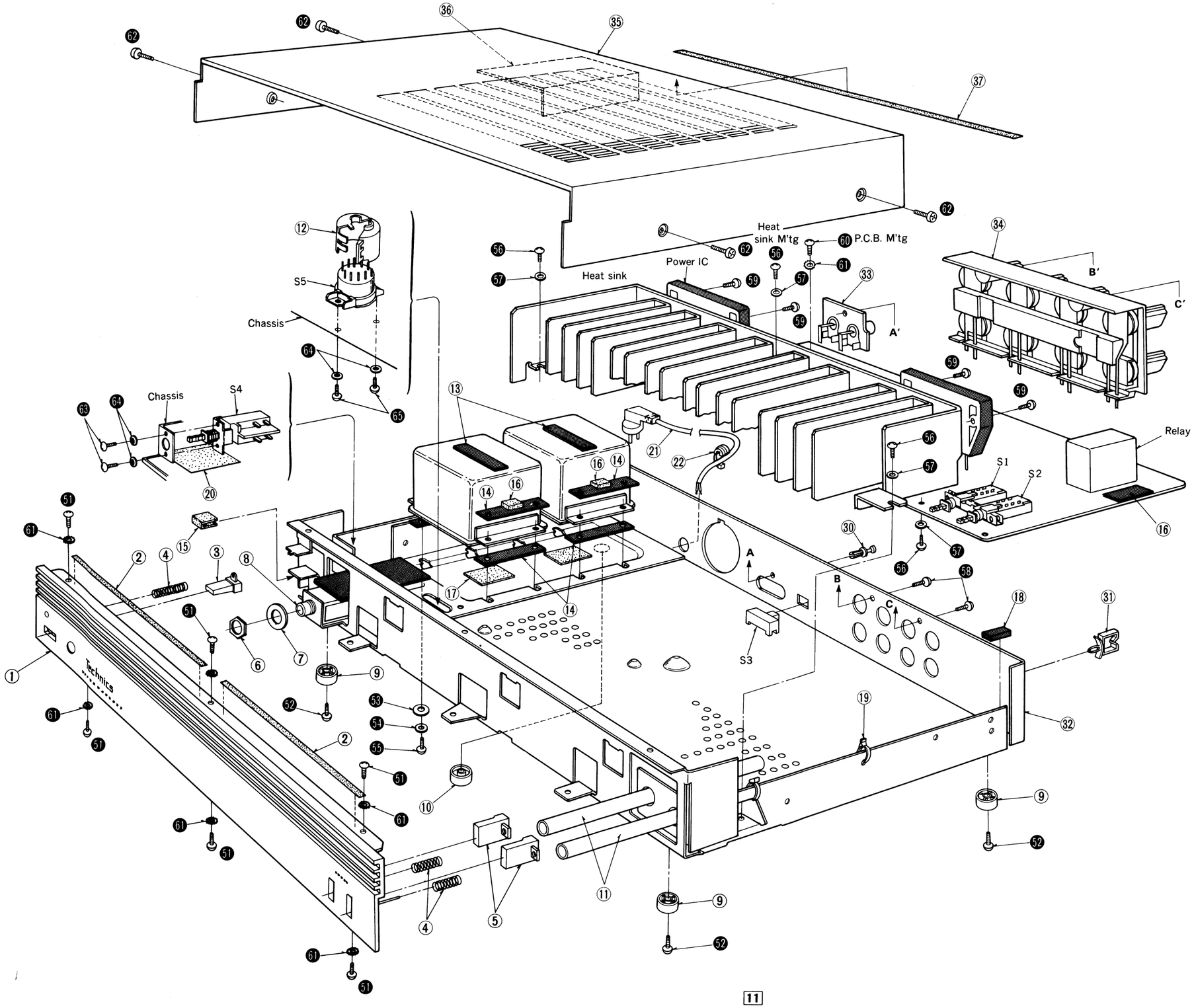
* (DX) is available in Scandinavia except Denmark and European.
* (DG) is available in Scandinavia and European except Switzerland.
* (DM) is available in Denmark.
* (EB) is available in Beigium.
* (XE) is available in United Kingdom.
* (XSW) is available in Switzerland.
* (XGH) is available in Holland.
* (XGF) is available in France.
* (XA) is available in Asia, Latin America, Middle East and Africa.

■ ACCESSORIES



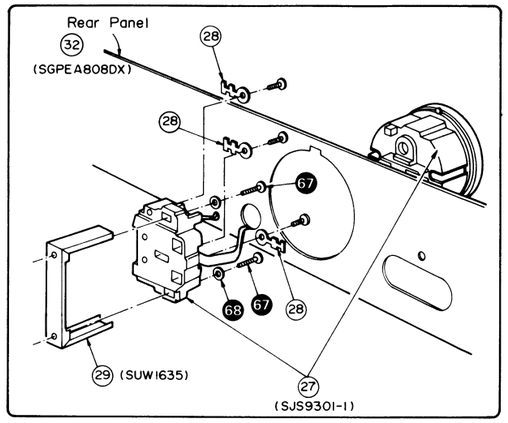


■ EXPLODED VIEWS

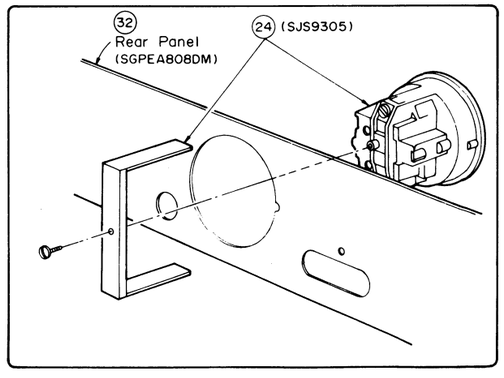


• AC outlet and rear panel

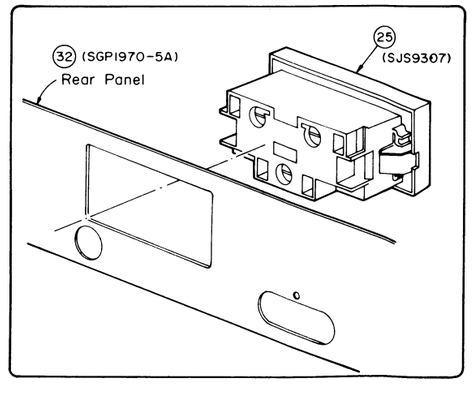
(DX, DG, EB, XGH, XGF). . . . .
For Scandinavia and European
(Except for Switzerland, United Kingdom and Denmark)



(DM). . . .For Denmark

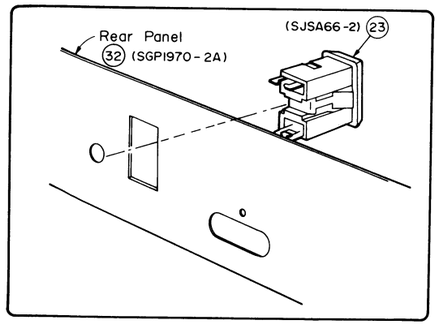


(XSW). . .For Switzerland

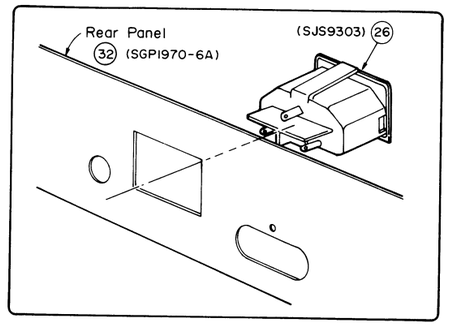


- **AC outlet and rear Panel**

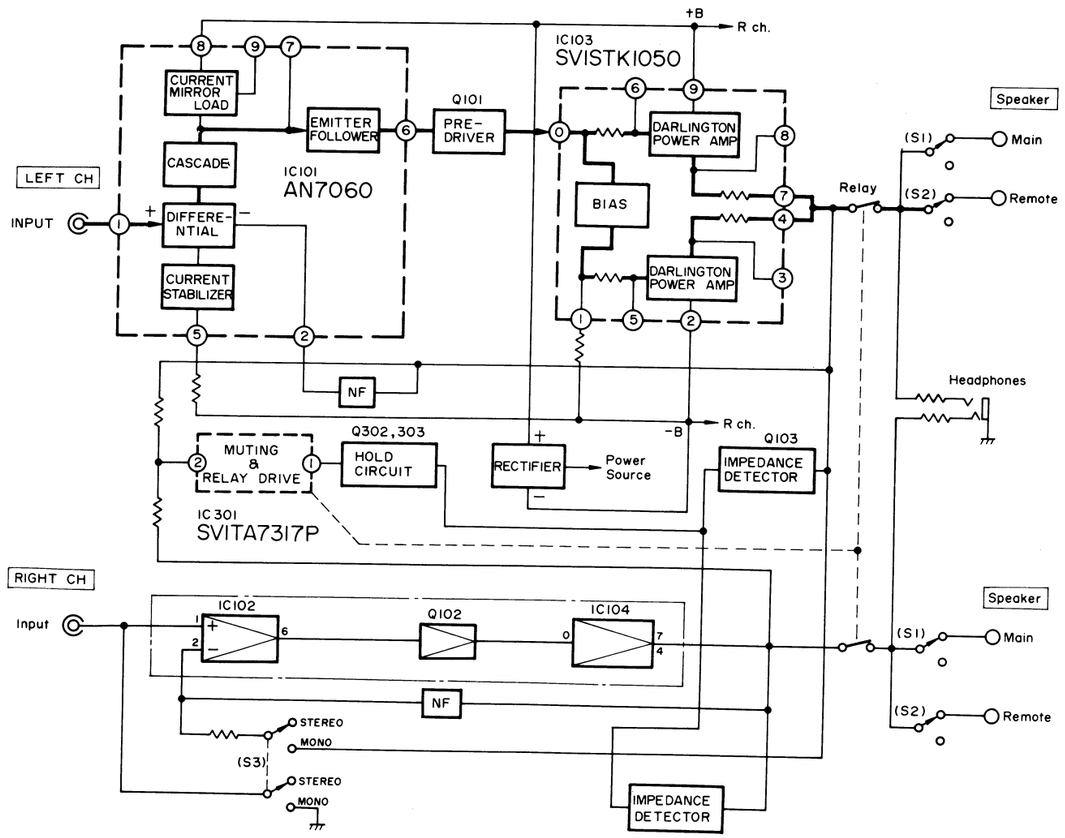
(XA) . . . .For Asia, Latin America Middle East and Africa



(XE) . . . .For United Kingdom



■ BLOCK DIAGRAM



■ TECHNICAL GUIDE

- **Protection Circuits**

This set incorporates a DC protection circuit to protect the speakers from DC voltage applied to the speaker terminals due to circuit troubles, etc. and an overload protection circuit to prevent breakdown of the output stage due to overload.

The overload protection circuit is illustrated in Fig. 4. In this circuit, if the voltage at the emitter (terminal 8) of the output stage is 10V, the base voltage of Q103 will be about 9V. Then, the emitter voltage of Q103 is about 9.8V ($R_L = 8\Omega$), divided by R_E and R_L. Therefore, this transistor will not operate.

When the speaker terminals are short-circuited, the emitter voltage of Q103 is 0V, that is, the transistor turns ON. Then, the collector potential decreases causing Q301 and Q302 of the switching hold circuit to operate, and then the speaker circuit relay is turned OFF by the relay drive circuit.

This circuit is also a kind of impedance detection circuit since it is designed to operate when R_L is less than the specified load impedance as well as when the speaker terminals are short-circuited.

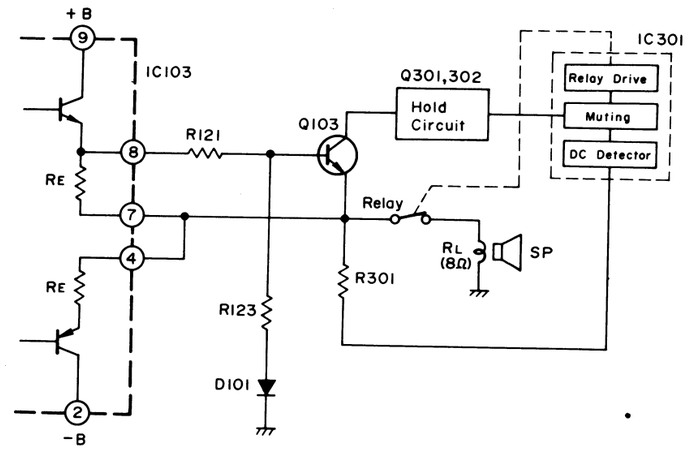


Fig. 4

The overload protection circuit continues operating unless the power supply is cut off. If no output is given with power supply turned ON, turn off the power switch to check the speakers and speaker terminals for abnormality such as shortcircuit.

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